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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,843	02/25/2002	Hideo Sugimura	03500.016231.	3762

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EXAMINER	
HSIEH, SHIH WEN	

ART UNIT	PAPER NUMBER
2861	

DATE MAILED: 12/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/081,843	SUGIMURA ET AL.	
	Examiner	Art Unit	
	Shih-wen Hsieh	2861	MW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Response to Amendment

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato (US Pat. No. 5,831,644).

In regard to:

Claim 1:

Kato teaches:

An ink jet recording apparatus for recording data by discharging ink from ink discharge ports of an ink -jet recording head, comprising:

a head recovering unit (71, 73 and 75, fig. 4) for performing an operation for recovering a discharge function of said ink jet recording head, said head recovering unit

comprising a cap member for tightly closing said ink discharge ports, refer to col. 6, lines 1-21;

a recording medium conveying mechanism (51, 55, 57, 53, 21, 61 and 63, figs. 1 and 2) for conveying the recording medium, refer to col. 5, lines 18-20 and also refer to col. 5, line 45+ for how the recording medium is being fed, also please refer to col. 7, line 30+ for the motor 33, which is used to operate recording medium supply mechanism; and

a connecting unit (gears 37, 47, shaft 23A, gears 81, 97, 98 and 85 along with lever 89, figs. 3 and 4) for transmitting a driving force of said recording medium conveying mechanism to said head recovering unit, said connecting unit switching between transmission and no transmission of the driving force to said head recovering unit in conjunction with a capping operation of said cap member, refer to col. 6, lines 22-38 (specially, lines 35-37) and col. 7, line 1 to at least line 18, till up to line 18 of col. 7, the invention specifies that the transmission of a driving force is prohibited (or no transmission and in fig. 4, the extreme end of 89, the 89A is pressed against smaller gear 85B such that no transmission of the driving force is existed, when 89 is in vertical oriented as seen in fig. 4, transmission of driving force is made).

Claim 2:

Kato further teaches:

wherein a first driving source (33, fig. 1) for supplying a driving force to said recording medium conveying medium is connected to said connecting unit. As discussed above for claim 1, the connecting unit is made of (gears 37, 47, shaft 23A,

gears 81, 97, 98 and 85 along with lever 89, figs. 3 and 4) and the driving source (33) transmits its driving force to gear 37 through its output gear 35, this driving force is used to convey recording medium and also through gears 37, 47, shaft 23A, gears 81, 97, 98 and 85 along with lever 89 to drive recovery mechanism.

Claim 3:

The ink jet recording apparatus according to claim 2,

wherein said connecting unit is a mechanical clutch mechanism which can be set selectively in a connected condition where the connecting unit is connected to said head recovering unit so as to transmit the driving force to said head recovering unit or in a non-connected condition where the connecting unit is not connected to said head recovering unit so as not to transmit the driving force to said head recovering unit.

Rejection:

This claim is rejected on the basis as set forth for claims 1 and 2 discussed above.

Claim 4:

Kato further teaches:

wherein said connecting unit is a mechanical clutch mechanism comprising a sun gear (85B, fig. 4) coupled with said recording medium conveying mechanism, a planet gear (85A, fig. 4) coupled with said sun gear, and a gear holding member (15E, 83 and 87, fig. 4) which holds said sun gear and said planet gear and is engageable with a driving mechanism (gear 93, fig. 4) for driving said cap member (73, fig. 4).

Claim 5:

Kato further teaches:

wherein said head recovering unit has a sucking mechanism (75, fig. 4) for sucking ink out of said ink jet recording head and wherein said connecting unit transmits a driving force to said sucking mechanism in a connected condition to said head recovering unit, refer to col. 6, lines 13-15 and col. 8, lines 4-21.

Claim 9:

Kato teaches:

A recovering method for an ink jet recording apparatus for recording data by ejecting ink from ink discharge ports of an ink jet recording head to a recording medium, comprising steps that:

a connecting unit transfers a driving force from a first driving source (33, fig. 1) for conveying a recording medium to a sucking unit (73 and 75, fig. 4) in conjunction with an operation of a cap member (73, fig. 4) to tightly close said ink discharge ports; and

said sucking unit (75, fig. 4) to which said driving force is transmitted performs suction recovery of said ink jet recording head through said cap member.

Rejection:

This claim is rejected on the basis as set forth for claim 1, in which, the connecting unit is those gears and shaft (23A) as shown in fig. 4 and the driving force of motor 33 can only be transmitted to the recovery unit when the lever (89) switches its position from a slant position to a vertical position as the situation represented by distal end (89A) of the lever (89).

Claim 10:

The recovery method for the ink jet recording apparatus according to claim 9, wherein said connecting unit is a mechanical clutch mechanism which can be set selectively in a connected condition where the connecting unit is connected to said head recovering unit so as to transmit the driving force to said head recovering unit or in a non-connected condition where the connecting unit is not connected to said head recovering unit so as not to transmit the driving force to said head recovering unit.

Rejection:

This claim is the same as those in claim 3 and is rejected on the basis as set forth for claim 3 discussed above.

Claim 11:

Kato further teaches:

wherein said cap member is driven by a second driving source (gears 93 and 95 and cam 77, fig. 4), refer to col. 8, lines 4-21.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 6-8 and 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato.

In regard to:

Claim 6:

Kato further teaches:

wherein said ink jet recording apparatus has a second driving source (carrying driving-force transmission mechanism comprises of gears 37 and 47 and transmission gear 81 and maintenance gear driving force mechanism comprises gears, 97, 98 and 85, fig. 4) for supplying a driving force to the cap member of said head recovering unit, refer to col. 4, line 62 to col. 6, line 62 (to be in short, the driving force for moving the cap is from the cam 77, which in turn is driven by gears 93 and 95, which in is driven by gear 85, which in turn is driven by gears 81, 97 and 98 and the driving of these gears is from gear 47 through shaft 23A and carrier roller 23).

The device of Kato DIFFERS from claim 6 in that it does not teach:

a third driving source for supplying a driving force to a carriage mounting said ink jet recording head.

Kato only teaches the carriage (11) is reciprocated along rails (5 and 7, fig. 1) without further indicating a motor is for that purpose.

Therefore it would have been obvious to a person having ordinary skill in the art to realize that a motor for supplying a driving force to reciprocate the carriage within a so-called printing zone/region within the printer is well known in the art, with this power drive, the carriage can be moved reciprocally across the printing zone/region and in the meantime, ink droplet are ejected from nozzles based on inputted signals to produce a desired image, refer to MPEP 2144.03, In re Malcolm 129 F.2d 529, 54 USPQ 235 (CCPA 1942).

Claim 7:

Kato further teaches:

wherein said second driving source supplies a driving force for feeding said recording medium.

Rejection:

The rotation of shaft 23A and carrier roller 23, which are part of the second driving source for driving the cap member, will feed the recording medium, refer to col. 5, lines 45-59.

Claim 8:

The device of Kato DIFFERS from claim 8 in that it does not teach:

wherein said ink jet recording head discharges ink from the ink discharge ports utilizing heat energy generated by electrothermal converting elements.

An electrothermal converting elements or electrothermal transducers or simply resistors are widely used in an ink jet printer as a prime force to discharge in ink droplet by film boiling phenomena. Other discharge method being used commonly in ink jet printer is by a piezo material to discharge ink through vibrations of a pressure chamber containing ink.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use either a electrothermal or a piezo as the prime force such that ink droplets can be shot out from nozzles of the printer continuously or in demand by either of these primers to form an image on a recording medium, refer to MPEP 2144.03, In re Malcolm 129 F.2d 529, 54 USPQ 235 (CCPA 1942).

Claim 12:

The recovering method for the ink jet recording apparatus according to claim 9, wherein said ink jet recording head ejects ink from the ink discharge ports utilizing heat energy generated by electrothermal converting elements.

Rejection:

This claim is the same as those in claim 8 and is rejected on the basis as set forth for claim 8 discussed above.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Response to Arguments

7. Applicant's arguments filed on Sept. 29, 2003 have been fully considered but they are not persuasive.

Applicants mainly argued about the adequacy of US 5,831,644 to Kato. Examiner respectfully disagrees with the argument in amendment dated Sept. 29, 2003. The reason is as follows:

the connecting unit in the claim is made of:

(1) pump sun gear 23;

(2) pump planet gear 24;

(3) pump planet gear 25; and

(4) pump planet arm 26. (specification page 12, lines 18-26)

Similar to this connecting unit described above, Kato also used a set of gears as set forth and described in Examiner's office action dated May 28, 2003 as a mechanism for transmitting a driving force for feeding a recording medium to a maintenance station containing a cap member (73). The transmitting/no transmitting of this driving force was explained in that office action. Applicants capping operation was described in specification page 18, line 2-21. According to Applicants' description, the tightly close the nozzle of the head is through the reverse rotation of the AP motor 18. This reverse rotation of AP motor 18 activate main cam 61 (figs. 5 and 6) and the capping operation is accomplished as shown in fig. 9. Therefore, Applicants' capping operation is similar to Kato's invention, i.e., through a certain rotation direction of the motor (AP motor 18 in the instant application, 33 in Kato's invention) and a set of gears. However, further in Applicants' specification page 19, line 22+, a negative pressure producing operation follows the capping operation. This is done by the LF motor (14). The claimed "said connecting unit switching between transmission and no transmission of the driving force to said head recovering unit in conjunction with a capping operation of said capping member" according to Examiner's understanding from specification page 17, line 18 to page 21, line 1 is: after capping by the reverse rotation of AP motor 18, and in conjunction with this, a negative pressure operation is then initiated (by LF motor 14) so as to apply this pressure to the internal of the cap. However, a negative pressure

producing device was not recited in the claim as part of the recovering unit (only capping device was recited). Therefore, after the capping operation is completed in either Kato or the instant application, Examiner completes his rejection. As to the underlined portion in the recitation above, Examiner presumes some other action such as the negative pressure producing operation should have been recited in the claim so as to be activated in conjunction with the capping operation as those described in Applicants' specification page 17, line 18 to page 21, line 1. Examiner therefore maintains his position. Or, more recitation should have been added in the claim in the form of some kind of operation will be activated in conjunction with the capping operation.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 703-305-4961. The examiner can normally be reached on 7:30AM -5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, B. Fuller can be reached on 703-308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

SHIH-WEN HSIEH
PRIMARY EXAMINER

Shih-wen Hsieh
Primary Examiner
Art Unit 2861

SWH

December 2, 2003